USSR UDC 532.132

GRIGOR'YEV, V. N., GULIN, B. A., YESEL'SON, B. N., KOREPANOV, V. D., MIKHEYEV, V. A.

"Device for Investigating Diffusion and Magnetic Characteristics of ^{3}He and ^{3}He-^{4}He Solutions by the Spin Echo Method"

Trudy, Fiziko-tekhnicheskiy institut nizkikh temperatur (Physico-technical Institute for Low Temperatures--collection of works) Academy of Sciences, Ukrainian SSR, No. 10, 1970, pp 166-177 (from RZh-Fizika, No. 9, 1971, Abstract No. 9E36)

Translation: The description is given of a spin echo device, designed for investigating the characteristics of ^{3}He and ^{3}He-^{4}He solutions in the liquid and solid states. The device permits measurements of the coefficient of diffusion, the magnetic susceptibility, and the magnetic relaxation time, as they vary in a broad range. The results of controlled measurements of the diffusion coefficient in liquid ^{3}He at various pressures are given. These results correspond well with the results obtained by other authors. Author's abstract.

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UDC: 551.596+534-143

USSR

GULIN, E. P.

"Correlation Characteristics of the Wave Field for a Nonmonochromatic Radiation Source in Media with Random Parameters"

Moscow, V sb. Tezisy dokl. 3-y Vses. shkoly--seminara po stat. gidroakustike, 1971 (Theses of Reports, Third All-Union School--Seminar on Statistical Hydroacoustics, 1971) 1972, pp 4-21 (from RZh--Fizika, No 4, 1973, Abstract No 4Zh643)

Translation: On the basis of linear filter theory, some general relationships are obtained for channels (C) with random parameters. These relationships permit computing the correlation connections in the wave field (WF) given by specific models of the C and by the types of signal. As examples, two models of C with random parameters are considered: a space filled with large-scale nonuniformities, and a uniform half-space bounded by an uneven surface with sloping irregularities. For both C models and some types of signal, the space-time correlation of the WF and the mutual correlation between the original radiation and the WF at some point in space are calculated. An arbitrary scalar WF is examined. For

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USSR

GULIN, E. P., Tezisy dokl. 3-y Vses. shkoly--seminara po stat. gidroakustike, 1971 (from RZh--Fizika, No 4, 1973, Abstract No 4Zh643)

both C models, the broadening of the radiation band acts equally on the space and time scales of the WF correlation as well as on the characteristics of the correlation receiver output signal. Also, the results relating to the dependence of the intensity of the unperturbed part of the field and the signal fluctuations on the distance and space scales of the random parameters of the C (the nonuniformities in the medium and the surface irregularities) differ substantially. Whereas in a medium with random nonuniformities the unperturbed part of the field weakens with the distance and with increasing dimensions of nonuniformity, the reduction in the unperturbed component in reflection from the irregular surface is stronger the greater the sliding angle but is independent of the distance between the radiator and the receiver and of the horizontal dimensions of the irregularity. In the case of the signals determined, there is some difference in the results of the computation in the examination of both C models only for sufficiently broad-band radiation. In the case of narrow-band radiation, the computations for both the C models give identical results. It is noted that the results obtained are applicable to hydroacoustical signals and to electromagnetic wave fields in which polarization effects play a minor role. Bibliography of eight. V. K.
2/2

Television

UDC: 681.14.533.8

USSR

BRAUDE, G. V., BONCH-BRUYEVICH, A. M., GEL'FANDBEYN, Ya. A., GULIN, I. N., KRIVOSHEYEV, M. I., MIRSKIY, G. Ya., TISHCHENKO, I. M., TEL'NYKH, O. A., KHESIN, A. Ya.

"A Television Device for Determining the Coordinates of Point Objects"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 26, Sep 71, Author's Certificate No 313210, p 165

Translation: This Author's Certificate introduces a television device for determining the coordinates of point objects. The device contains a television transmitting tube with memory, an output scanning unit, a video signal processing unit, an erasure unit, a synchronizing unit, a cadence pulse generator, an optical shutter, and a data input module. As a distinguishing feature of the patent, the accuracy of coordinate determination is improved by tying series-connected horizontal and vertical interrogation counters to the output of the cadence pulse generator. The counter outputs are connected through shaping matrixes for horizontal and vertical deflection to the input of the output scanning unit. At the same time, a second output of the vertical interrogation counter is connected through a decoder to the data input module.

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USSR

UDC 621.385.7

GULINA, N.P.

"To An Evaluation Of The Current Density From the Cathode Of Electron Devices In The Presence Of A Magnetic Field"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronics Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 5, pp 148-151 (from RZh--Elektronika i yeye primeneniye, No 8, August 1970, Abstract No 8A22)

Translation: During a computation of the current density from a cathode in a magnetic field by the well-known 3/2 power law for an equipotential close to the cathode, errors occur which depend on the magnitude of the magnetic field and the distance to a computed equipotential. Formulas are proposed for determining the correction factors which make it possible to decrease the errors mentioned. Summary.

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1/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--A DEVICE FOR DETERMINING THE TRAJECTORIES OF CHARGED PARTICLES -U-

AUTHOR-(02)-GULINA, N.P., EPSHTEYN, M.S.

COUNTRY OF INFO--USSR

SOURCE--PATENT NO 264008
REFERENCE--OTKRYTIYA, IZOBRETENIYA, PROMYSHLENNYYE OBRAZTSY, TOVARNYYE
DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PARTICLE PHYSICS, MATHEMATIC EXPRESSION, PATENT, PARTICLE TRAJECTORY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1243 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0131720
UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0131720

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS AUTHOR'S CERTIFICATE INTRODUCES A DEVICE FOR DETERMINING THE TRAJECTORIES OF CHARGED PARTICLES IN A CARTESIAN COORDINATE SYSTEM. THE UNIT CONTAINS AN ELECTROLYTIC BATH, A MOVING PROBE HEAD WHICH ACTS AS A FIELD PICKUP, AND A COMPUTER DEVICE. AS A DISTINGUISHING FEATURE OF THE PATENT, THE ACCURACY OF DATA READOUT FROM THE SURFACE OF THE ELECTROLYTE IS IMPROVED BY MAKING THE PROBE HEAD IN THE FORM OF TWO ELECTRODES LOCATED AT A FIXED DISTANCE FROM EACH OTHER AND ORIENTED ALONG ONE OF THE COORDINATE AXES. THE ELECTRODES ARE CONNECTED RESPECTIVELY TO A UNIT FOR CALCULATION OF THE COMPONENT OF THE POTENTIAL GRADIENT ALONG THE SELECTED AXIS AND TO A UNIT FOR CALCULATION OF THE POTENTIAL AT THE GIVEN POINT.

UNCLASSIFIED

USSR

UDC 681.333

GULINA, N. P., and EPSHTEYN, M. S.

"A Device for Determining the Trajectories of Charged Particles"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 8, 1970, p 121, patent No 264008, filed 24 Jan 68

Abstract: This Author's Certificate introduces a device for determining the trajectories of charged particles in a Cartesian coordinate system. The unit contains an electrolytic bath, a moving probe head which acts as a field pickup, and a computer device. As a distinguishing feature of the patent, the accuracy of data readout from the surface of the electrolyte is improved by making the probe head in the form of two electrodes located at a fixed distance from each other and oriented along one of the coordinate axes. The electrodes are connected respectively to a unit for calculation of the component of the potential gradient along the selected axis and to a unit for calculation of the potential at the given point.

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1/3 027 UNCLASSIFIED PROCESSING DATE--020CT70

TITLE--ON CONNECTION OF THE TRICARBOXYLIC CYCLE WITH SOME PROCESSES OF METABOLISM -U-

AUTHOR--GULIY, M.F.

COUNTRY OF INFO--USSR

SOURCE--UKRAYNS'KIY BIOKHIMICHNIY ZHURNAL, 1970, VOL 42, NR 2, PP 175-190

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CITRIC ACID, TISSUE PHYSIOLOGY, PHOSPHATE, ENZYME, ADENOSINE TRIPHOSPHATE, DIABETES MELLITUS, LIVER, GLUCOSE, RABBIT, MYOCARDIUM

CONTROL MARKINGS--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1527 STEP NO--UR/0300/70/042/002/0175/0190

CIRC ACCESSION NO--AP0106282

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--020CT70

2/3 027

CIRC ACCESSION NO--AP0105282

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW IS GIVEN OF THE RESULTS OF THE EXPERIMENTAL RESEARCHES TESTIFYING TO THE FACT THAT IN TISSUES OF THE ANIMAL ORGANISM CITRIC ACID CHANGES WITH FORMATION OF ACYLPHOSPHATES: CITRYLPHOSPHATE AND ACETYLPHOSPHATE. THE DATA ARE PRESENTED CONCERNING ISOLATION AND IDENTIFICATION OF BOTH ACYLPHOSPHATES AS WELL AS ENZYMES CATALYZING REACTIONS OF FORMATION OF THE MENTIONED ACYLPHOSPHATES AT THE EXPENSE OF CITRIC ACID: THE CRYSTALLINE CITRATE SYNTHETASE FROM PIG MYOCARDIUM AND PURIFIED PROTEIN FRACTION 0.2 FROM RABBIT LIVER. THE MENTIONED ENZYMIC PREPARATIONS CATALYZE REACTIONS ACCORDING TO THE FOLLOWING SCHEME: (SHOWN ON MICROFICHE). FRACTION 0.2 CONTAINS TWO ENZYMES, ONE OF WHICH SUBSTITUTES COA IN CITRYL COA BY PHOSPHORIC RESIDUE AT THE EXPENSE OF ATP, AND THE OTHER AT THE EXPENSE OF ORTHOPHOSPHATE; THEY SPLIT FORMING CITRYLPHOSPHATE INTO OAA AND ACETYLPHOSPHATE. IT IS SHOWN THAT ACETYLPHOSPHATE IN ANIMAL TISSUES WITH THE PRESENCE OF COA IS TRANSFORMED INTO ACETYL COA, IN THE PRESENCE OF ADP AND OAA OF THE PROTEIN FRACTION 0.2 INTO CITRIC ACID AND UNDER ANAEROBIC CONDITION IS TRANSFORMED BY THE LIVER HOMOGENATE INTO GLUCOSE. THE REAL AND POSSIBLE WAYS ARE SHOWN OF THESE TRANSFORMATIONS.

UNCLASSIFIED

3/3 027 UNCLASSIFIED PROCESSING DATE--02OCT70
CIRC ACCESSION NO--AP0106282
ABSTRACT/EXTRACT--THE LITERARY AND OWN DATA ARE GIVEN CONCERNING THE MECHANISM OF CITRATE SYNTHETASE REACTION AND FORMATION OF CITRYL COA IN IT AND INTERACTION BETWEEN TRICARBOXYLIC CYCLE AND METABOLISM OF FATS, PROTEINS AND CARBOHYDRATE IN THE ORGANISM AS WELL. THE CONNECTION IS SHOWN BETWEEN DISTURBANCES OF THE TRICARBOXYLIC CYCLE AND APPEARING OF DIABETES IN ANIMALS AND PEOPLE AS WELL AS THE ANTIKETOGENIC AND ANTIGLYCEMIC EFFECT OF CITRIC AND OTHER ACIDS OF THE TRICARBOXYLIC EFFECT WITH DIABETES AND SOME OTHER PATHOLOGIES.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--PROTEIN AND LIPID BIOSYNTHESIS IN RABBIT KIDNEYS AND SPLEEN AFTER PARTIAL HEPATECTOMY AND EFFECT OF SODIUM BICARBONATE AND BIVALENT

AUTHOR-(03)-ZHURBIN, G.I., GULIY, M.F., SICHNIY, N.A.

COUNTRY OF INFO--USSR

SOURCE--UKRAYNS'KIY BIOKHIMICHNIY ZHURNAL, 1970, VOL 42, NR 3, PP 325-328

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--KIDNEY, SPLEEN, SURGERY, PROTEIN, LIPID, BIOSYNTHESIS, CARBON ISOTOPE, CHEMICAL LABELLING, MAGNESIUM COMPOUND, MANGANESE COMPOUND, ZINC COMPOUND, TISSUE REGENERATION, LIVER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605043/E01 STEP NO--UR/0300/70/042/003/0325/0328

CIRC ACCESSION NO--AP0142903

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--11DEC70
CIRC ACCESSION NO--AP0142903
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF SODIUM BICARBONATE AND MA PRIME2 POSITIVE, MN PRIME2 POSITIVE AND ZN PRIME2 POSITIVE IONS ACTIVATING THE PROCESSES OF CO SUB2 FIXATION IN THE ANIMAL TISSUES ON THE C PRIME14 INCORPORATION INTO PROTEINS AND LIPIDS OF KIDNEYS AND SPLEEN WAS STUDIED IN THE DYNAMICS OF LIVER REGENERATION AFTER 80PERCENT HEPATECTOMY 24, 72 AND 168 HRS AFTER THE OPERATION. AN HOUR BEFORE KILLING 21.5 MU C PER 1 KG OF LIVE WEIGHT OF 2,C PRIME14 SODIUM ACETATE WERE ADMINISTERED INTRAVENOUSLY TO THE ANIMALS AND SPECIFIC RADIOACTIVITY OF KIDNEY AND SPLEEN PROTEINS AND LIPIDS WAS DETERMINED. IT IS SHOWN, THAT 10 DAY FEEDING OF THE MENTIONED SALT MIXTURE (SODIUM BICARBONATE, 25 PARTS, MAGNESIUM, 5 PARTS, MANGANESE AND ZINC, 0.1 PART; 604 MG OF THE MIXTURE PER 1 KG OF LIVE WEIGHT) TO RABBITS CONSIDERABLE INCREASES THE C PRIME14 INCORPORATION INTO KIDNEY PROTEINS 24 AND 74 HRS AFTER PARTIAL HEPATECTOMY AND INTO SPLEEN PROTEINS, IN ALL THE TERMS OF THE INVESTIGATION. THE INCREASE OF THE INTENSITY OF TEH LABEL INCORPORATION INTO THE KIDNEY AND SPLEEN LIPIDS IS NOTED ONLY ON THE THIRD DAY AFTER THE LIVER REGENERATION BEGINNING. TRUSTWORTHY DIFFERENCES BETWEEN THE VALUES OF SPECIFIC RADIOACTIVITY OF PROTEINS AND LIPIDS OF RABBIT KIDNEYS AND SPLEEN WITH REGENERATING LIVER, WHICH DID NOT GET SALT MIXTURE, AND SHAMLY OPERATED ANIMALS WERE NOT ESTABLISHED.
FACILITY: INSTITUTE OF BIOCHEMISTRY, ACADEMY OF SCIENCES, UKRAINIAN SSR, KIEV.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--AVIDIN EFFECT ON INTENSITY OF C PRIME14 INCORPORATION FROM NAHC PRIME14 O SUB3 AND GLYCINE,1,C PRIME14 INTO PROTEINS AND LIPIDS OF RAT

AUTHOR-(02)-GULIY, M.F., MELNICHUK, D.O.

COUNTRY OF INFO--USSR

SOURCE--UKRAYNS'KIY BIOKHIMICHNIY ZHURNAL, 1970, VOL 42, NR 3, PP 322-324

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CARBON ISOTOPE, CHEMICAL LABELLING, PROTEIN, LIPID, LIVER, CELL PHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605044/B08 STEP NO--UR/0300/70/042/003/0322/0324

CIRC ACCESSION NO--AP0142944

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0142944

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AVIDIN EFFECT WAS STUDIED ON INTENSITY OF C PRIME14 INCORPORATION FROM NAHC PRIME14 O SUB3 AND GLYCINE,1,C PRIME14 INTO PROTEINS AND LIPIDS OF RAT LIVER HOMOGENATES. AS A RESULT, IT IS SHOWN THAT AVIDIN, INHIBITING THE FIXATION OF CO SUB2, APPROXIMATELY TO THE SAME DEGREE INHIBITS THE INCORPORATION OF C PRIME14 FROM GLYCINE,1,C PRIME14 INTO PROTEINS AND LIPIDS.

FACILITY: INSTITUTE OF BIOCHEMISTRY, ACADEMY OF SCIENCES, UKRAINIAN SSR, KIEV.

UNCLASSIFIED

USSR

UDC 619:576.807.7-616.988.43

GULIYEV, M. A., CHAKVETADZE, N. V., and KHUKHUNAISHVILI, P. I., Republic Veterinary Laboratory, Ministry of Agriculture Georgian SSR

"Improved Typing of Foot-and-Mouth Disease Virus"

Moscow, Veterinariya, No 9, 1971, pp 33-34

Abstract: The reaction of prolonged inhibition of complement fixation, based on the phenomenon that incomplete antibodies are formed in the blood of animals with infectious diseases, was used for the identification and typing of foot-and-mouth disease (FMD) virus in the serum of animals convalescing from the disease. All of the elements entering into a complement fixation reaction -- standard FMD virus hyperimmune sera and antigens $0,0_{194},A,A_{22}$, and C, hemolysin, complements, and washed ram's eryhtrocytes were used. The sera were diluted in physiological saline, inactivated, and poured into test tubes to which standard antigens of various types and variants were added, and kept at 2-4°C for 18-20 hours. Standard sera with complement and hemolysin were added and warmed at 37°C for 30 minutes. Anticomplement and hemolytic activity of the sera were studied for control purposes. The method was used in the study of 231 sera obtained from convalescing cattle, 11 -- from sheet and goats, and six from hogs. In all cases hemolysis was

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GULIYEV, M. A., et al., Veterinariya, No 9, 1971, pp 33-34

strongly inhibited, which indicates the specificity of the method. The prolonged complement fixation inhibition reaction can thus be recommended for use in the identification and typing of FMD virus.

Gyroscopic

USSR

UDC 531.31

GULYAYEV, M. P. (Volgograd)

"The Regular Precessions of a Heavy Gyrostat"

Moscow, Prikladnaya Matematika i Mekhanika, No 4, 1973, pp 746-753

Abstract: The regular precessions of a heavy asymmetric gyrostat are found by direct integration of the equation system of N. Ye. Zhukovskiy, the equations being written down in terms of the main axes of inertia. An investigation is made of the properties of the indicated movements; the possibility of controlling them is disclosed. An investigation is made of the forces that are capable of bringing about regular precession in gyrostats. 2 figures. 7 references.

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USSR

UDC 533.6.013.42

GULIYEV, YU. M.

"Approximation Method for Determining Hydrodynamic Characteristics Under Oscillations of a Plane Contour"

Sudostr. i sudoremont. Nauch.-tekhn. sb. (Ship Design and Ship Repair, Scientific-Technical Collection), 1970, No. 4, pp 34-43 (from RZh-Mekhanika, No 3, Mar 72, Abstract No 3V516)

Translation: A plane contour is understood to mean a transverse cut of an elongated body flowing on the free surface of a liquid. The relationship between the perturbing vertical forces and the moment acting on the fixed contour under an incident wave and forced oscillations of the contour in the rest liquid is used for an approximation of the hydrodynamic characteristics of an oscillating plane contour (coefficients of damping and connected masses). This relationship is reflected in the asymptotic behavior of the characteristic function which enters into the expansion for the potential of the perturbed velocities. This was shown in the work of M. D. Khaskind (Izv. AN SSSR, Otd. tekhn. n., 1957, No. 7, pp 65-79; RZhMekh, 1958, No. 3, Abstract No 2923), which gives rules for approximate estimates of the hydrodynamic characteristics of plane [illegible]

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USSR

GULIYEV, YU. M., Sudostr. i sudoremont. Nauchn.-tekhn. sb., 1970, No. 4, pp 34-43

tossing under wave action. The duplicate contour at a given depth in the liquid is introduced into the study to account for the effect of the free surface. Hydrodynamic forces acting on it under wave action after transition to finding the above characteristic function is carried out. The problem of vertical oscillations of a floating cylinder is considered as an example. The coefficient of hydrodynamic damping is evaluated on the basis of the dependence of the dimensionless amplitude of the dispersing waves at a great distance from the cylinder considering the frequency and depth of the liquid. The coefficients of damping and connected masses of liquid are compared with the corresponding exact solution and the solution obtained experimentally for cylinders oscillating on a free surface. Graphs are in good agreement with one another over a wide range of change in the frequency of the oscillations. K. G. Kravtsov.

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USSR

UDC 629.12:532

GULIYEV, YU. M., MONEYM, AKHMED FARUK

"Disturbing Forces During Pitching of a Ship on a Sandbar"

Sudostr. i sudoremont. Nauch.-tekhn. sb. (Shipbuilding and Ship Repair. Scientific and Technical Collection), 1970, vyp. 3, pp 129-142 (from RZh-Mekhanika, No 11, Nov 71, Abstract No 11B390)

Translation: An approximate procedure is presented for calculating the disturbing forces during pitching of ships in a liquid of finite depth. The procedure was obtained on the basis of solving the hydrodynamic problem of forces acting on a stationary triaxial ellipsoid floating on the surface of an ideal liquid of finite depth. When solving this problem, the velocity potential is represented by the sum of the oncoming wave potential and the potential of the disturbed (diffracted) movement of the liquid. When calculating the disturbing forces, the Haskind conclusion was used that there is no need to solve the diffraction problem but it is sufficient to determine the velocity potential of the disturbed movement of the liquid for forced oscillations of the body on quiet water. The calculation was performed on a digital computer for 24 ellipsoids with different halfaxis ratios by the approximate formulas obtained for the dimensionless coefficients of the disturbing force and the disturbing moment.

Examples of the graphical dependence of these coefficients on the

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USSR

GULIYEV, YU. M., et al., Sudostr. i sudoremont. Nauch.-tekhn. sb., 1970, vyp. 3, pp 129-142

relative wavelength and the relative draft are presented. The possibility of practical utilization of the results of the theoretical study was checked by comparing the results of the calculations by the formulas obtained with the data obtained experimentally on 9 models of series 60 ships with different ratios of the primary dimensions. The experimental studies demonstrated that for ordinary maritime transport ships the geometric characteristics of the hull and the depth of the water have no significant effect on the dimensionless coefficients of the disturbing forces. This fact permits application of the approximate formulas obtained to the practical calculations of disturbing forces. Comparison of the calculation results by these formulas with the experimental data demonstrates entirely satisfactory coincidence.

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USSR UDC 62..233.4

GABASHVILI, N. V., corresponding member of the Georgian Academy of Sciences, GULIZADE, M. P., corresponding member of the Georgian Academy of Sciences, KARTVELISHVILI, O. M., and KHALIMBEKOV, B. M.

"One Problem in the Optimization of the Process of Drilling Slanted Holes"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 61, No 1, 1971, pp 33-36

Abstract: A system of differential equations describing the process of drilling slanted holes with a turbine drill is derived in this article. These equations allow one to obtain the optimal parameters of the drilling operation and of the contour of the hole. The drilling parameters taken into consideration are: axial load on the bit of the turbine drill, number of revolutions of the drill, and the type of deflecting equipment needed to obtain the correct slope of the shaft. Minimum drilling time was selected as the overall criterion of optimality.

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1/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ELASTIC ELECTRON SCATTERING ON NICKEL 58, NICKEL 60, NICKEL 64, AND TIN 112, TIN 118 ISOTOPES -U-
AUTHOR-(05)-KHVASTUNOV, V.M., AFANASEV, N.G., AFANASEV, V.D., GULKAROV, I.S., OMELAENKO, A.S.
COUNTRY OF INFO--USSR

SOURCE--NUCL. PHYS. A 1970, 146(1), 15-25

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--ELECTRON SCATTERING, ELASTIC SCATTERING, NICKEL ISOTOPE, TIN ISOTOPE, CHARGE DENSITY, ATOMIC RADIUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0274 STEP NO--NE/0000/70/146/001/0015/0025

CIRC ACCESSION NO--AP0119269
UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0119269

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ABS. MEASUREMENTS HAVE BEEN PERFORMED FOR THE ELASTIC SCATTERING OF 225 MEV E ON PRIME 58,60,64 NI AND PRIME 112,118 SN ISOTOPES. THE EXPTL. RESULTS WERE ANALYZED BY USING THE HIGH ENERGY APPROXN. FOR THE FERMI TYPE CHARGE D. DISTRIBUTION. THE DERIVED ROOT MEANSQUARE RADII SHOW A CORRELATION BETWEEN THE CHANGE OF THE CHARGE RADIUS OF THE ISOTOPES AND THE ORBITAL MOMENTA (OR N SUBSHELL FILLING) OF THE ADDED N. THE RADII, DEDUCED FROM THE TRANSITION ENERGIES OF MUONIC ATOMS, TURN OUT TO BE SMALLER. AGREEMENT BETWEEN THE 2 EXPTS. CAN BE REACHED UNDER THE ASSUMPTION THAT THE CHARGE D. HAS A PRONOUNCED MAX. IN THE CENTRAL REGION OF THE PRIME58 MI NUCLEUS AND IS LESS PRONOUNCED FOR PRIME118 SN. FACILITY: PHYS. TECH. INST., KHARKOV, USSR.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--30UCT70
TITLE--USING A DIGITAL COMPUTER FOR CALCULATING THE ANGULAR CHARACTERISTICS OF SATURATED, PHANEROPOLAR, SYCHRONIC MACHINES -U-
AUTHOR-(03)-SALAYAK, I.I., FILTS, R.V., GULKHIVSKIY, L.I.

COUNTRY OF INFO--USSR

SOURCE--MINSK, IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY: ENERGETIKA, NO 2, 1970, PP 1-5
DATE PUBLISHED--------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--DIGITAL COMPUTER, ANGLE MEASURING INSTRUMENT, SYNCHRONOUS GENERATOR, MAGNETIC SATURATION, MAGNETIC FIELD/(U)RAZDANZ DIGITAL COMPUTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1695 STEP NO--UR/0143/70/000/002/0001/0007

CIRC ACCESSION NO--AT0123519
UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0123519

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS PRESENTED FOR CALCULATING THE ANGULAR CHARACTERISTICS OF THE ACTIVE AND REACTIVE CAPACITIES OF A PHANEROPOLAR, SYNCHRONIC MACHINE. THE METHOD TAKES INTO CONSIDERATION SATURATION OF POLES, ARMATURE YOKE AND TOOTH ZONE, VARIABLE AIR GAP, AND THE DISTRIBUTION OF THE WORKING MAGNETIC FIELD ALONG THE POLAR DIVISION. THE CALCULATION WAS CARRIED OUT BY THE NUMERICAL METHOD ON A DIGITAL COMPUTER ACCORDING TO ANGULAR CHARACTERISTIC EQUATIONS IN DIFFERENTIAL FORM. A COMPARISON IS GIVEN OF CHARACTERISTICS CALCULATED ON THE "RAZDAN-2" DIGITAL COMPUTER AND THOSE OBTAINED EXPERIMENTALLY.

UNCLASSIFIED

USSR UDC 577.1:615.7/9

GUL'KO, A. G., and DRANOVSKAYA, L. M.

"Content and Elimination of Orally Administered Hexachlorobutadiene From An Organism"

V sb. Aktual'n. vopr. gigiyeny i epidemiol. (Current Problems of Hygiene and Epidemiology), Kishinev, "Kartya Moldovenyaske," 1972, pp 61-62 (from RZh-Biologicheskaya khimiya, No 11, Jun 73, Abstract No 11 F2066)

Translation: When hexachlorobutadiene (I) was orally administered to rats one time, during the first 3 hours the concentration of hexachlorobutadiene was higher in the blood than in other tissues and organs, dropped after 6 hours, and was not detected after 3 days. In the liver, brain kidneys, and spleen the content of I reached the maximum by the end of the first day and was not detected in these tissues by the third day (in the brain traces of I were found by the seventh day). In the gastrointestinal tract the content of I declined from the first hour up to 7 days while I was detected in the urine after 6 hours. In subcritical experiments in which 0.1 LD_{50} I (16.5 mg/kg) was administered 7, 16, 27 and 44 times, no pronounced relationship was observed between the content of I in the blood and tissues and the summary dose.

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USSR

GUL'KO, A. G., and DRANOVSKAYA, L. M., Current Problems of Hygiene and Epidemiology, Kishinev, "Kartya Moldovenyaske," 1972, pp 61-62

Two weeks after I was withdrawn, traces of I were found only in the brain and in the urine. In animals that received I in different doses for one year (5 times a week), I was not detected in biosubstrates 3, 6, and 12 months after the administration of I.

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USSR

UDC 577.1:615.7/9

GUL'KO, A. G., and ZIMINA, N. I.

"Protein-Forming Function of the Liver of Rats Poisoned by the Inhalation of Hexachlorobutadiene"

V sb. Aktual'n. vopr. gigiyeny i epidemiol. (Current Problems of Hygiene and Epidemiology), Kishinev, "Kartya Moldovenyaske," 1972, pp 64-65 (from RZh-Biologicheskaya Khimiya, No 11, Jun 73, Abstract No 11 F2067)

Translation: Rats were subjected to one-time poisoning with hexachlorobutadiene (I) at a threshold concentration of 0.071 (0.056-0.086) milligrams per liter for four hours and the effect of I on the liver was assessed from 3 hours to 14 days on the basis of changes in total protein and protein fractions as well as changes in SH groups in the blood serum and liver. The content of general protein declined after 7 days while the content of albumins declined after 6 hours. The content of α_1 and α_2 globulins was higher after 3 hours and returned to normal by the seventh day. The content of β globulins was higher after one day and returned to normal after 14 days. The content of γ globulins declined after 3 hours, rose again after 6 hours, declined by the end of a day and returned to normal after 3 days. The content

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USSR

GUL'KO, A. G., and ZIMINA, N. I., Current Problems of Hygiene and Epidemiology, Kishinev, "Kartya Moldovenyaske," 1972, pp 64-65

of SH groups in the blood serum and the liver was higher at the beginning of the experiment and returned to normal after 12 hours and 7 days respectively. The protein coefficient (albumin/globulin), which was 0.67 in the control, increased to 0.72 3 hours after the poisoning with I, declined to 0.45 after 6 hours and was somewhat higher than the control after 24 days. It was concluded that changes discovered in the proteingram are evidence of the heightened protective reaction of the organism to the toxic effect of I which affects the protein-forming function of the liver.

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1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--THEORETICAL ANALYSIS OF THE MECHANISMS OF NERVE IMPULSE CONDUCTION ALONG A NONUNIFORM AXON. II. CONDUCTION OF A SINGLE IMPULSE THROUGH A

AUTHOR-(04)-KHODOROV, B.I., TIMIN, YE.N., VILENKIN, S.YA., GULKO, F.B.

COUNTRY OF INFO--USSR

SOURCE--BIOFIZIKA 1970, 15(1), 140-6

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SQUID, NEURON, MATHEMATIC MODEL, NARCOTIC, CALCIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0628 STEP NO--UR/0217/70/015/001/0140/0146

CIRC ACCESSION NO--AP0117854

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0117854

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NERVE IMPULSE CONDUCTION ALONG A FIBER REGION WITH ALTERED MEMBRANE PROPERTIES WAS STUDIED ON A MATH. MODEL OF SQUID GIANT AXON. THE EFFECTS OF TETRODOTOXIN, NARCOTICS, AND CA PRIME2 POSITIVE WERE CONSIDERED. FACILITY: A. V. VISHNEVSKII INST. SURG., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 553.65:548.522

ORLOVA, I. G., SHAPIRO, Ya. Z., and GNIL'KO, N. V., Ukrainian Scientific Research Institute of Refractory Materials

"The Effect of Some Oxides on the Crystallization of Corundum Whiskers From the Gas Phase"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol 7, No 7, Jul 71, pp 1188—1191

Abstract: The crystallization of corundum whiskers according to a previously described method (V. S. Papkov et al., Kristallografiya, 9, 442, 1964) by vaporization of Al_2O_3 in a C-atmosphere in the presence of additions of SiO_2 , TiO_2 , and ZrO_2 was investigated. The semicrystalline corundum ceramic was heated up to 1700—2000 ^{o} C in a furnace by passing through it Ar containing 0.003 % O_2 and 0.01 % N_2 . The positive effect of TiO_2 and ZrO_2 additions is demonstrated and their optimum application conditions are determined. It was found that crystals of corundum crystallize only on graphite; they have the growth forms A_1 and C and crystals of the growth form A_1 are characterized by a mean breaking strength of $\sim$50,000 kg/cm^2 and higher. One table, nine biblio. refs.
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USSR

UDC 577.1:615.7/9

GUL'KOM A. G., DRANOVSKAYA, L. M., and CHERNOKAN, V. F.

"Materials on the Distribution and Elimination of Epidermically Administered Hexachlorobutadiene From the Bodies of Experimental Rats"

V sb. Aktual'n. vopr. gigiyeny i epidemiol. (Current Problems of Hygiene and Epidemiology), Kishinev, Kartya Moldovenyaske," 1972, pp 63-64 (from RZh-Biologicheskaya Khimiya, No 11 Jun 73, Abstract No 11 F2068)

Translation: Three hours after the one-time epidermic administration of 43.3 mg/kg (0.01 LD_{50}) of hexachlorobutadiene (I) to rats, the insectiside was detected in the blood and kidneys, after 6 hours -- in the brain and fatty tissue, and after 24 hours -- in the liver. I was not detected in adipose cellualr tissue, in the blood, in the brain, and in kidneys after 3, 7, 14, and 14 days, respectively. I was detected in the urine after 12 and 24 hours. I gradually enters the body from the skin over a period of 7 days. In Chronic experiments (administered to the skin in doses of 2.1; 4.3 and 86. mg/kg for a period of 6 months), by the end of 4 months of administration I was found only in the skin and was absent from the blood, from internal organs and from the urine as well as from the spleen, from cardiac and skeletal muscles and from the abdominal wall and from the skin other than the point of administration. 1/1

1/3 031 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--DETERMINATION OF DECELERATION IN BASE RADAR OBSERVATION OF METEORS -U-
AUTHOR-(04)-GULMEDOV, KH.D., KVACHADZE, G.P., LAGUTIN, M.F., SMAGIN, D.M.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA AKADEMII NAUK TURKMENSKOY SSR, SERIYA FIZIKO-TEKHNICHESKIKH, KHIMICHESKIKH I GEOLOGICHESKIKH NAUK, NO 3, 1970,
DATE PUBLISHED-------70

SUBJECT AREAS--NAVIGATION, ATMOSPHERIC SCIENCES, ASTRONOMY,ASTROPHYSICS

TOPIC TAGS--RADAR METEOR OBSERVATION, DECELERATION, ATMOSPHERE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0389 STEP NO--UR/0202/70/000/003/0122/0124

CIRC ACCESSION NO--AP0137485
UNCLASSIFIED

2/3 031 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137485

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KHAR'KOV INSTITUTE OF RADIO ELECTRONICS, JOINTLY WITH THE INSTITUTE OF PHYSICS OF THE EARTH AND ATMOSPHERE ACADEMY OF SCIENCES TURKMEN SSR, IN 1968 COMPLETED WORK ON A BASE RADAR COMPLEX. THIS OUTFIT INCLUDES SIC HIGHLY STABLE TRANSMITTING SYSTEMS ORIENTED ALONG A WEST-EAST DIRECTION, APPROXIMATELY UNIFORMLY OVER A DISTANCE OF 42 KM. THE RECEIVING CENTER WITH A PULSED RANGE FINDER WAS SITUATED AT THE ASTROPHYSICAL OBSERVATORY AT VANNOVSKIY AND WAS SHIELDED BY MOUNTAINS FROM THE DIRECT WAVES OF THE TRANSMITTERS. THIS PAPER GIVES THE RESULTS OF DETERMINATIONS OF THE DECELERATION OF INDIVIDUAL METEORS IN THE EARTH'S ATMOSPHERE ON THE BASIS OF MEASUREMENTS MADE DURING APRIL-MAY 1969. ASSUMING A LINEAR APPROXIMATION OF THE CHANGE IN VELOCITY V WITH TIME, THE LEAST SQUARES METHOD WAS USED IN COMPUTING MEAN METEOR DECELERATION. FOR 84 METEORS REGISTERED IN THE MIDDLE SEGMENT OF THR TRAIL DECELERATION WAS MEASURED AT NOT LESS THAN THREE POINTS ALONG THE TRAIL AND WAS 33 KM-SEC PRIME2. THE MEASUREMENT RESULTS WERE EXAM;INED FOR DIFFERENT VELOCITY RANGES: 25-35, 35-45, 45-55, 55-70 KM-SEC. A TABLE GIVES ALL PERTINENT DATA: N, NUMBER OF PROCESSED MEASUREMENTS, BAR V, MEAN VELOCITY, BAR A, MEAN DECELERATION, AND DELTA BAR A, MEAN SQUARE ERROR IN BAR A. THE DETERMINED DEPENDENCE OF ACCELERATION ON VELOCITY IS COMPARED WITH THE DEPENDENCE OBTAINED BY F. VERNIANI (SMITH CONTR. TO ASTROPHYS., 1966). IN BOTH CASES THE DEPENDENCE WAS THE SAME AND APPROXIMATELY LINEAR.

UNCLASSIFIED

3/3 031 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137485

ABSTRACT/EXTRACT--IF IT IS POSTULATED THAT MOST REFLECTION STATISTICS APPLY TO THE PART OF THE TRAIL WITH MAXIMUM IONIZATION (OR CLOSE TO IT), IT IS SHOWN THAT ONE CAN MAKE A THEORETICAL DETERMINATION OF THE LOSS OF VELOCITY WITH ALTITUDE FOR THE ENTIRE GROUP OF MEASURED METEORS. FOR 39 METEORS THE AUTHORS FOUND: BAR V EQUALS 54 KM-SEC; DELTA BAR H EQUALS 2.55 PLUS OR MINUS 0.17 KM; DELTA VAR V-DELTA H EQUALS 1.1 PLUS OR MINUS 0.1 KM-SEC. THIS MEAN VALUE OF LOSS OF VELOCITY WITH ALTITUDE IS AN ORDER OF MAGNITUDE GREATER THAN THE CORRESPONDING VALUE COMPUTED THEORETICALLY FOR POINTS ON A TRAIL CLOSE TO THE POINT OF MAXIMUM IONIZATION. FACILITY: INSTITUTE OF PHYSICS OF THE EARTH AND ATMOSPHERE, ACADEMY OF SCIENCES TURKMEN SSR; ASHKHABAD.

UNCLASSIFIED

1/3 029 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--DETERMINING METEOR RADIANT AND ALTITUDE IN CONTINUOUS RADAR OBSERVATIONS -U-

AUTHOR-(04)-GULMEDOV, KH.D., LAGUTIN, M.F., SMAGIN, D.M., KHANBERDYYEV, A.KH.

COUNTRY OF INFO--USSR

SOURCE--ASHKHABAD, IZVESTIYA AKADEMII NAUK TURKMENSKOY SSR, SERIYA FIZIKO-TEKHNICHESKIKH, KHIMMCHESKIKH I GEOLOGICHESKIKH NAUK, NO 2, 1970,

DATE PUBLISHED--------70

SUBJECT AREAS--ASTRONOMY,ASTROPHYSICS, NAVIGATION

TOPIC TAGS--METEOR RADIANT, RADAR METEOR OBSERVATION, REFLECTED SIGNAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0104 STEP NO--UR/0202/70/000/002/0076/0083

CIRC ACCESSION NO--AP0125926

UNCLASSIFIED

2/3 028 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125926

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS OF THIS ARTICLE PROPOSE A METHOD FOR DETERMINING THE RADIANT, DECELERATION AND ALTITUDE OF A METEOR DURING RADAR OBSERVATIONS IN A CONTINUOUS REGIME; IT REQUIRES USE OF NO ADDITIONAL ANGLE MEASURING DEVICES. THE INITIAL DATA WERE THE RESULTS OF ANALYSIS OF THE AMPLITUDE AND TIME CHARACTERISTICS OF REFLECTED SIGNALS. THE METHOD WAS DEVELOPED BY THE ASTROPHYSICAL LABORATORY IN THE PROGRAM OF JOINT RESEARCH BY THE KHAR'KOV INSTITUTE OF RADIOELECTRONICS AND THE INSTITUTE OF PHYSICS OF THE EARTH AND ATMOSPHERE ACADEMY OF SCIENCES TURKMEN SSR. USE OF THE CONTINUOUS OBSERVATION METHOD MAKES IT POSSIBLE TO COMPUTE METEOR VELOCITY WITH A HIGHER ACCURACY BECAUSE THE REFLECTED SIGNAL HAS DIFFRACTION OSCILLATIONS TO THE REFLECTION POINTS WHICH ARE LEAST SUBJECT TO WIND INFLUENCE. HOWEVER, USE OF CONITNUOUS RADIATION COMPLICATES DETERMINATION OF THE DIRECTION COSINES OF THE TRAIL. IN THE CASE OF A PULSED SYSTEM THE RATIO OF THE DISTANCE BETWEEN REFLECTION POINTS ON THE TRAIL TO THE DISTANCE SEPARATING TWO CORRESPONDING RECEIVERS AT THE EARTH'S SURFACE IS EQUAL TO HALF THE COSINE OF THE ANGLE BETWEEN THE DIRECTION OF THE TRAIL AND THE LINE CONNECTING THESE RECEIVERS. THIS OCCURS WHEN THE RECEIVERS ARE 5-3 KM FROM THE TRANSMITTER. WHEN USING THE CONTINUOUS RADAR METHOD THE DIRECT WAVE IS ATTENUATED BY PLACING THE RECEIVERS AT GREAT DISTANCES FROM THE TRANSMITTER. TENS OF KILOMETERS MAY SEPARATE THE EXTREME POINTS. FOR SUCH BASES THE DIRECTION COSINES OF THE TRAIL ARE DEPENDENT NOT ONLY ON THE SPACING OF REFLECTION POINTS ALONG THE TRAIL, BUT ALSO ON THE SPATIAL POSITION OF THE TRAIL.

UNCLASSIFIED

3/3 028 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125926

ABSTRACT/EXTRACT--IN COMPUTING THE ORBIT IT IS NECESSARY TO KNOW NOT ONLY THE VELOCITY VECTOR OF THE METEOR, BUT ITS DECELERATION AS WELL; THIS REQUIRES A MULTISTATION MEASURING SYSTEM FOR MEASURING APPARENT VELOCITIES AT SEVERAL POINTS ALONG THE TRAIL. THE ARTICLE DESCRIBES A COMPLEX FOR FIVE SPACED TRANSMITTERS AND A RECEIVING REGISTERING APPARATUS. FORMULAS ARE DERIVED AND AN EXAMPLE USED IN ILLUSTRATING THE METHOD FOR DETERMINING THE COORDINATES OF THE RADIANT FROM THE DIRECTION COSINES OF THE TRAIL. THE ARTICLE THEN DESCRIBES A SIMPLE PHASE METHOD FOR MEASURING THE ANGULAR COORDINATES OF A METEOR TRAIL BASED ON A DIRECT COMPARISON OF THE AMPLITUDE TIME CHARACTERISTICS OF THE REFLECTED SIGNALS. FACILITY: INSTITUTE OF PHYSICS OF THE EARTH AND ATMOSPHERE, ACADEMY OF SCIENCES TURKMEN SSR.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--EFFECT OF THE NATURE OF INDIFFERENT ELECTROLYTE ANIONS DURING THE CATALYTIC LIBERATION OF HYDROGEN AT THE MERCURY ELECTRODE -U-

AUTHOR-(03)-MAYRANOVSKIY, S.G., GULTYAY, V.P., LISITSINA, N.K.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(4), 541-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--METAL ELECTRODE, ELECTROLYTE, HYDROGEN, SULFATE, ADSORPTION, NITRATE, SULFATE, BROMIDE, CHLORIDE, POLAROGRAPHIC ANALYSIS, QUININE, POTASSIUM CHLORIDE, POTASSIUM BROMIDE, POTASSIUM NITRATE, POTASSIUM IODIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/1126 STEP NO--UR/0364/70/006/004/0541/0547

CIRC ACCESSION NO--AP0121685

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0121685
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF THE ANION (FROM K SUB2 SO SUB4, KNO SUB3, KI, KBR, OR KCL) ON THE CATALYTIC POLAROGRAPHIC WAVE OF H, PRODUCED BY 3 TIMES 10 PRIME NEGATIVE 5 M QUININE IN 0.05 N H SUB2 SO SUB4 SOLN., WAS STUDIED AT 25DEGREES. THE LIMITING CURRENT INCREASED AND THE E SUBONE HALF SHIFTED TO MORE NEG. POTENTIALS WITH INCREASING CONCN. OF THE SALT AND THE INDICATED EFFECT INCREASED IN THE ORDER CLNEGATIVE LESS THAN BRNEGATIVE LESS THAN INEGATIVE LESS THAN NO SUB3NEGATIVE LESS THAN SO SUB4 PRIME2NEGATIVE. THESE CHANGES WERE PRIMARILY DUE TO THE CHANGE IN THE ACID BASE PROPERTIES (PK SUBA) OF QUININE AND SECONDARILY TO THE CHANGE IN THE ADSORPTION OF QUININE AT THE HG ELECTRODE. (THE ADSORPTION OF QUININE DECREASED IN THE SEQUENCE NO SUB3NEGATIVE GREATER THAN OR EQUAL TO SO SUB4 PRIME2NEGATIVE GREATER THAN CLNEGATIVE GREATER THAN BRNEGATIVE). FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.314.222.6

NEKRASOV, M. M., GUL'TYAYEVA, L. G., and ZLOGODUKH, G. M.

"Piezoceramic Shift-Type Transformers"

Kiev, Izvestiya VUZov SSSR--Radioelektronika, No. 5, 1970, pp 508-513

Abstract: The transformer is an electromechanical device with a double energy conversion capable of transforming an electrical voltage to mechanical oscillations (or the harmonics) caused by the resonance amplification of stresses and voltages. In the simplest case, the piezoceramic transformer is a three-lead component made of a piezoceramic bar with surface electrodes, and consists of an exciter and an oscillator. A periodic electric field applied to the exciter causes the whole bar to oscillate mechanically as a result of the inverse piezoelectric effect. Resonance oscillations and standing waves result at particular frequencies, the natural mechanical frequencies along one of the geometric dimensions. The amplitudes of the elastic stresses and strains are given a resonance amplification, and these stresses set up an electric field at the oscillator electrodes. The equivalent circuit of the piezotransformer is given, and some computational equations are derived. Also shown are diagrams of various arrangements of these transformers. The curve for the transformer coefficient as a

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NEKRASOV, M. M., et al, Izvestiya VUZov SSSR--Radioelektronika, No 5, 1970, pp 608-613

function of the frequency indicates that a change in the load capacitance causes a change in the output signal amplitude as well as a large shift in the resonant frequency. These devices can thus be used in measurement devices involving sensors with a resonant circuit.

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Acc. Nr: AP0047322 Ref. Code: UR 0300

PRIMARY SOURCE: Ukrayns'kiy Biokhimichniy Zhurnal, 1970, Vol 42, Nr 1, pp 71-75

STRENGTHENING OF THE SYNTHETIC PROCESSES IN THE RABBIT REGENERATING LIVER BY STIMULATING CO_2 FIXATION

G. I. Zhurbin, M. F. Guly, N. A. Stogny

Institute of Biochemistry, Academy of Sciences, Ukrainian SSR, Kiev

Summary

The effect was studied of the mixture of salts (sodium bicarbonate — 25 parts, magnesium sulphate — 5 parts, manganese sulphate and zinc sulphate — by 0.1 part) activating the processes of CO_2 fixation in animal organism on the synthetical processes in the dynamics of the rabbit liver regeneration with ablation of 80% of the organ mass after 10 days of feeding them on the mentioned salt mixture at a rate of 604 mg per 1 kg of live weight. Considerable intensification and acceleration of protein, lipid and glycogen synthesis are established.

The process of the initial liver weight restoration noticeably accelerates. The content of dry substances is increased by 6% in the regenerating liver of rabbits which were fed on the salt mixture.

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REEL/FRAME
19790843

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Acc. Nr: AP0047338 G Ref. Code: UR 0300

PRIMARY SOURCE: Ukrayns'kiy Biokhimichniy Zhurnal, 1970, Vol 42, Nr 1, pp 102-105

INCORPORATION OF C^{14} FROM RADIOACTIVE ACETATE INTO TISSUES AND COMPONENTS OF TISSUES IN HENS OF DIFFERENT AGE GROUPS

V. V. Sushkova, M. F. Gulyy

Institute of Biochemistry, Academy of Sciences, Ukrainian SSR, Kiev

Summary

The dynamics was studied of C^{14} incorporation from sodium acetate into proteins of liver, lipids and glycogen of the liver and muscles into proteins of blood serum as well as into tissue of the myocardium and pectoralis in cocks of different age.

Radioactivity was determined 30, 60, 90 and 120 min (in some cases 40 min) after introducing the isotope indicator.

It is shown that incorporation and excretion of the radioactive label in chickens proceeds quicker than in adult hens. Maximum of C^{14} incorporation into proteins, lipids

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REEL/FRAME
19790863

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AP0047338

and glycogen of liver in chickens begins in 40 min after introducing 2-C^{14} acetate and in cocks at the age of 18 months in 1.5 hrs. In hens of the same age incorporation of C^{14} into the myocardium occurs more intensively and quicker than in pectoralis. With age the intensity of label incorporation into tissues and components of tissues lowers in hens. The sharpest difference in C^{14} incorporation with age is observed in 30 min after labelling The lowering in the intensity of the label incorporation into proteins, lipids and glycogen of the liver is particularly pronounced when comparing groups of 1—3- and 6—18-month cocks. Trustworthy differences are not found between the values of specific radioactivity of proteins, lipids and glycogen of the liver in 6- and 18-month cocks.

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19730864

1/2 012 UNCLASSIFIED PROCESSING DATE--[illegible]

TITLE--THERMAL STABILITY OF SCANDIUM HYDROXIDE THIOCYANATE -U-

AUTHOR-(04)-GULIA, V.G., KOMISSAROVA, L.N., KRASNOVARSKAYA, A.A., SAS, T.M.

COUNTRY OF INFO--USSR

SOURCE--VESTN. MOSK. UNIV., KHIM. 1970, 11(1), 38-41

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THERMAL STABILITY, SCANDIUM COMPOUND, HYDROXIDE, THIOCYANATE, HYDROLYSIS, CHEMICAL DECOMPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1098 STEP NO--UR/0189/70/011/001/0038/0041

CIRC ACCESSION NO--AP0104496

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104496

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THERMAL STABILITY OF SC HYDROXIDE THIOCYANATE SC SUB4 (OH)SUB2(NCS)SUB10.11H SUB2 O IS STUDIED. THE COMPD. IS COMPLETELY UNSTABLE IN AIR EVEN AT ROOM TEMP. IT IS HYDROSCOPIC, ABSORBS MOISTURE INCREASING ITS WT. BY 24.71PERCENT, AND THEN SLOWLY DECOMPS. BY HYDROLYSIS.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--FORMATION OF COMPLEXES OF SCANDIUM WITH THIOCYANATE IONS IN AQUEOUS SOLUTIONS -U-

AUTHOR-(04)-SAS, T.M., GAGARINA, V.A., KOMISSAROVA, L.N., GULIA, V.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1255-60

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COMPLEX COMPOUND, SCANDIUM COMPOUND, THIOCYANATE, POTENTIOMETRIC TITRATION, SPECTROPHOTOMETRY, IONIC BONDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0741 STEP NO--UR/0078/70/015/005/1255/1260

CIRC ACCESSION NO--AP0136180

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136180

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FORMATION OF SC(NCS) SUBN PRIME(3-N) POSITIVE IN AQ. SOLN. WAS STUDIED BY POTENTIOMETRY, SPECTROPHOTOMETRY, AND EXTN. (SC-NCS) PRIME2 POSITIVE IS THE MOST STABLE WITH STABILITY CONSTS. OF 0.54 AND 1.35 TIMES 10 PRIME NEGATIVE2 AT IONIC STRENGTH 1 AND 0.1, RESP. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--THERMAL STABILITY OF HEXATHIOCYANATOSCANDATES OF THE ALKALI METALS -U-

AUTHOR-(04)-GULIA, V.G., KOMISSAROVA, L.N., KRASNOYARSKAYA, A.A., SAS, T.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 966-71

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THERMAL STABILITY, THIOL, DEHYDRATION, SCANDIUM COMPOUND, LITHIUM COMPOUND, SODIUM COMPOUND, POTASSIUM COMPOUND, CESIUM COMPOUND, RUBIDIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/2034 STEP NO--UR/0078/70/015/004/0966/0971

CIRC ACCESSION NO--AP0132291

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132291

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STABILITY OF M SUB3 (SC(NCS) SUB6).NH SUB2 O (I) INCREASED WITH M IN THE ORDER: M EQUALS LI LESS THAN NA LESS THAN K LESS THAN RB LESS THAN CS. DEHYDRATION OF I (M EQUALS LI) WAS ACCOMPANIED BY DECOMPN. WHILE I (M EQUALS NA, CS, OR NH SUB4 PRIME POSITIVE) FORMED ANHYD. COMPLEXES. DTA DIAGRAMS OF THE COMPLEXES AND THEIR THERMAL DECOMPN. SCHEMES ARE GIVEN. SC SUB2 O SUB3 AND M SUB2 SO SUB4 ARE THE FINAL DECOMPN. PRODUCTS OBTAINED.

FACILITY: MOSK. GOS. UNIV. IM. LOMONOSIVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 629.114.4:669.14.018.298.2

GULYAEV, A.P., Dr. of Technical Sciences; ZIKEEV, V.N., Candidate of Techn. Sciences; SKOBNIKOV, V.V., Candidate of Techn. Sciences; KALININ, A.T., Cand. of Techn. Sciences; PROKOF'EVA, I.I., Cand. of Techn. Sciences., and Yelizarov, B.I.

"New Carburizing Steels for Engine Parts of High-Load Capacity Vehicles"

Moscow, Avtomobil'naya Promyshlennost' No 4, Apr 71, pp 37-39

Abstract: Results are presented of an investigation of physical and mechanical properties of the 18KhNMFA and 18KhNLMFA steels obtained in electric furnace of 5-ton capacity and rolled into rods 90 and 110-mm in diameter, and intended for manufacturing the transmission box items. The kinetics of austenite transformation at isothermic and continuous cooling, hardenability, brittleness, mechanical properties of steels in carburized and uncarburized state after hardening at 920-950°C in oil and annealing at 180-200° were studied. The results presented in tabular and graphical form, such as chemical composition, critical points, austenite transformation curves, show two distinct zones of transformation, a ferrite-perlite and a bainite transformations, while the austenite stability in the 18KhNLMFA steel is higher than in the 18KhNMFA steel. The microstructures of both steels are similar. The brittleness was evaluated by the cold shortedness threshold position, determined by the

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GULYAEV, A.P., et al, Avtomobil'naya Promyshlennost' No 4, Apr 71, pp 37-39

fracture aspect during serial tests. Both steels satisfy the requirement $T_{50} < -50^{0}$. The comparative tests of various items made of these and other steels, carried out on test stands, confirmed the higher quality of the [illegible] steels over the 15KhGNTA steels.

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USSR

UDC 669.721.053.4

VYATKIN, I. P., GULYAKIN, A. I., KECHIN, V. A., MUSHKOV, S. V.

"Protection of Magnesium from Saturation with Iron During Remelting in Steel Crucibles"

Tr. Vses. N.-i. i Proekt. In-ta Alyumin., Magn. i Elektrod. Prom-sti [Works of All-Union Scientific Research and Planning Institute for the Aluminum, Magnesium and Electrode Industry], No 79, 1971, pp 83-87, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G247 by G. Svodtseva).

Translation: High purity Mg is produced in a steel crucible by processing of the Mg raw material with Ti-containing additives, followed by cooling for various periods of time. The content of Fe is decreased from 0.03-0.04%, the content of Mg raw material to 0.001-0.005% following Ti treatment. Remelting of high purity Mg is possible in the production of alloys based on Mg or Al at consumer plants. High purity pig Mg containing 0.001% Fe was charged into a steel crucible, melted for 4 hours, heated to 710° and held for 1.5 hours, then repoured. The content of Fe remained at the same level during all stages of remelting. The content of other impurities also remained unchanged.

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USSR

SANDLER, R. A., [illegible]ARIL, A. I., and VLASOV, V. A., Leningrad

"Secondary Structure of Titanium Sponge Produced by Magnesium-heat Reduction of Lower Chlorides"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 1, Jan-Feb 1970, pp 73-[illegible]

Abstract: Data are presented on investigations of the secondary structure of titanium sponge produced by magnesium-heat reduction of concentrated chloride titanium containing fusions. The increased quality of the titanium, produced through magnesium-heat reduction of its lower chlorides, contributes to the production of a less porous structure and to the reduction of the residual content of chlorine after vacuum separation. An increase in the rate of use of magnesium results in the formation of closed pores, specifically, in the sponge of the upper part of the titanium block. An increase in the temperature of the reduction process leads to the production of a higher-density secondary structure of the sponge and to the reduction of the residual content of chlorine.

1/1

GULYAKIN A.I.

Acc. Nr: A0043724 Abstracting Service: 5/70 Ref. Code: UR0370

INTERNAT. AEROSPACE ABST.

A70-23783 # **Secondary structure of titanium sponge obtained by magnesiothermal reduction of lower chlorides (Vtorichnaia struktura titanovoi gubki, poluchennoi magnietermicheskim vosstanovleniem nizshikh khloridov).** R. A. Sandler, A. I. Guliakin, and V. A. Vlasov. *Akademiia Nauk SSSR. Izvestiia, Metally*, Jan.-Feb. 1970, p. 33-42. 8 refs. In Russian.

Evaluation of the results of studies of the secondary structure of titanium sponge obtained by magnesiothermal reduction of concentrated titanium-containing chloride melts. It is found that an increase in the quality of the titanium obtained by magnesiothermal reduction of its lower chlorides leads to the development of a more porous structure and to a reduction of the residual concentration of chlorine after vacuum separation. An increase in the overall degree of utilization of magnesium facilitates the formation of closed pores, particularly in the sponge of the upper part of the titanium block. An increase in the temperature of the reduction process leads to the development of a denser secondary sponge structure and to a reduction of the residual chlorine content. A.B.K.

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AL5

18

REEL/FRAME
19770130

1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--UPTAKE OF STRONTIUM 90 AND CESIUM 137 INTO PLANTS IN RELATION TO THE RADIOELEMENT ADSORPTION BY MECHANICAL FRACTIONS OF SOILS -U-

AUTHOR-(03)-YUDINTSEVA, YE.V., GULYAKIN, I.V., FOLOMKINA, Z.M.

COUNTRY OF INFO--USSR

SOURCE--AGROKHIMIYA 1970, (2), 30-9 (RUSS)

DATE PUBLISHED--------70

SUBJECT AREAS--AGRICULTURE, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--SOIL CHEMISTRY, STRONTIUM ISOTOPE, CESIUM ISOTOPE, ADSORPTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/0498 STEP NO--UR/0485/70/000/002/0030/0039

CIRC ACCESSION NO--AP0128067

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0128067

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PRIME90 SR IS ADSORBED BY ORG. AND INORG. SOIL FRACTIONS, AND THE STRENGTH IS DETD. BY THE NATURE OF THE MINERAL CONSTITUENTS. PRIME137 CS IS MAINLY ADSORBED BY THE MINERAL FRACTIONS. THERE EXISTS A CLOSE CORRELATION BETWEEN THE PRIME90 SR QUANTITY DESCRIBED BY 0.1N CACL SUB2 AND ITS ACCUMULATION IN THE CROP. BOTH NUCLIDES ARE HELD BY THE SILT FRACTION OF CHERNOZEM STRONGER THAN BY THAT OF SOD PODZOLS, WHICH HAS ITS BASE IN THEIR DIFFERENT MINERALOG. COMPN. FACILITY: BIOFIZ. LAB., VSES. NAUCH. -ISSLED. INST. FITOPATOL., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 669.721.046.4

POLYAKOV, Yu. A., KOROTKOV, Yu. A., GULYAKINA, A. Ye.

"Processing of Carnallite Powder in Rotating Furnaces"

Tr. Vses. N.-i. i Proekt. In-ta Alyumin., Magn. i Elektrod. Prom-sti [Works of All-Union Scientific Research and Planning Institute for the Aluminum, Magnesium and Electrode Industry], No 79, 1971, pp 37-42, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G246 by G. Svodtseva).

Translation: A method is developed for processing powder by briquetting and charging the briquettes into a furnace together with the initial carnallite. In order to eliminate the possibility of removal of incompletely dehydrated chunks, the briquettes must be made smaller. This is done by briquetting the powder using a roller press with smooth rolls, producing a pressed strip 400-600 mm wide and 4-4 mm [sic -- Tr] thick. As it leaves the rolls, the pressed strip is broken into chunks of various shapes and delivered to the cold end of the furnace drum. Dehydration of the carnallite and powder occurs practically without changing the quality of the product or increasing the yield of powder from the drum. 8 Biblio. Refs.

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USSR UDC 539.12

AZIMOV, S. A., GULYAMOV, U. G., GULYAMOV, K. G., PROZOROVA, YE. I., and CHERNOV, G. M., Institute of Nuclear Physics, Academy of Sciences Uzbek SSR

"Diffraction Coherent Particle Production in Interactions of 17 Gev Pions With Emulsion Nuclei"

Tashkent, Izvestiya Akademii Nauk Uzbekskoy SSR, Seriya Fiziko-Matematicheskikh Nauk, No 5, 1971, pp 70-75

Abstract: The article presents experimental data on inelastic coherent particle production reactions in collisions of 17.2-Gev pi-mesons with photoemulsion nuclei, based on extensive statistical material obtained with the aid of angular screening tests devised by the authors. Three-pronged and five-pronged interactions with a zero number of heavily ionizing particles were screened for measurements. The mean free path in the photoemulsion was found to be 53^{+7}_{-5} m for three-pronged coherent reactions, $3.8^{+11.5}_{-1.6}$ km for five-pronged events. The azimuthal angular distribution in coherent particle production reactions was studied.

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USSR UDC: 539.172.12

AZIMOV, S. A., ARIFKHANOV, U. R., GULYAMOV, M., ISLAMOV, B. I., ISKHAKOV, T., FAYZULLAYEV, U. I., ERGASHOV, E., Institute of Nuclear Physics, Academy of Sciences of the Uzbek SSR

"The Reaction $^{7}Li(pn)^{7}Be$ at $E_p = 17.5$ MeV"

Moscow, Izvestiya Akademii Nauk SSSR: Seriya Fizicheskaya, Vol 36, No 1, Jan 72, pp 173-174

Abstract: The neutron spectrum of the reaction $^{7}Li(pn)^{7}Be$ is studied on a proton beam in the U-150 cyclotron at the Institute of Nuclear Physics at the Academy of Sciences of the Uzbek SSR, using a multichannel, fast-neutron, time-of-flight spectrometer. The measurements were made at a proton energy of 17.5 MeV. The experimental data enabled the authors to distinguish neutron groups n_0 and n_1 corresponding to the ground and excited states of ^{7}Be ($E^* = 0.43$ MeV). Differential cross sections of the reaction are presented, with formation of neutron groups corresponding to the ground and excited states ($E_1^* = 0.43$ MeV and $E_2^* = 4.55$ MeV). All curves have a

USSR

AZIMOV, S. A. et al., IAN SSSR: Ser. Fiz., No 1, 1972, pp 173-174

diffraction structure with a first maximum at $\theta = 0°$ for n_0 and n_1 and a first maximum at $\theta \approx 20°$ for group n_2. The curves for n_1 and n_2 are antisymbatic. Three figures, bibliography of six titles.

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Acc. Nr AP0029108 Ref. Code: [illegible]

PRIMARY SOURCE: Zhurnal Nevropatologii i Psikhiatrii, 1970, Vol 70, Nr 1, pp 97-101

CONCERNING ACUTE ALCOHOLIC HALLUCINOSIS, PROCEEDING WITH DELUSIONS OF JEALOUSY

Gulyamov, M. G.; Rakhmimov, S. Ya.

The report deals with one of the varieties of acute alcoholic hallucinosis, the main feature of which is delusional jealousy. The acutely appearing delusional ideas of jealousy stem in these cases from hallucinations with an erotic character. The psychoses with auditory-hallucinatory—paranoid symptomatology is transient and there is a full favorable outcome of the psychotic condition. The appearance of delusions of jealousy in acute alcoholic hallucinosis does not predict a more severe course of the psychosis and is not a prognostically unfavorable sign.

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REEL/FRAME
19680619

2 MD

UDC 661.728.82:663.63

GULYAMOV, T., RASHIDOV, B. R., MAKSUDOV, E., and AYKHODZHAYEV, B. I., Institute of Nuclear Physics, Academy of Sciences Uzbek, SSR

"Acetylcellulose Membranes for Reverse Osmosis"

Tashkent, Uzbekskiy Khimicheskiy Zhurnal, Vol 17, No 3, 1973, pp 39-41

Abstract: A method was developed for the preparation of semipermeable membranes for reverse osmosis from cellulose acetate dissolved in dimethylformamide. The optimum conditions of preparing the membranes were evaporation of a solution containing 20% cellulose acetate + 80% dimethylformamide at 28-34° within less than 2 hrs, immersion in water for 2 min at 20-21°, and thermal fixation for 5 min at 81-86°. In tests conducted at 50 atm with a solution of 10 g NaCl/l., the efficiency of the membranes was 200-300 l./sq. m. per 24 hrs at a 95% degree of NaCl retention. When a solution with the composition cellulose acetate 20, dimethylformamide 75, H_2O 5% was used and thermal fixation was carried out at 86°, the efficiency increased to 500 l./sq. m. per 24 hrs while the degree of desalination remained at 94-5%. To increase the efficiency, the same inorganic additives as those used in the forming of membranes from acetone solutions of cellulose acetate could be

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GULYAMOV, T., et al., Uzbekskiy Khimicheskiy Zhurnal, Vol 17, No 3, 1973, pp 39-41

used (cf. S. Loeb and S. Sourirajan, Adv. Chem. Soc., 38, 117, 1963), but the degree of salt retention dropped. It follows from this that the optimal conditions of forming must be determined experimentally in every instance.

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UDC 539.12

USSR

AZIMOV, S. A., GULYAMOV, U. G., GULYAMOV, K. G., PROZOROVA, YE. I., and CHERNOV, G. M., Institute of Nuclear Physics, Academy of Sciences Uzbek SSR

"Diffraction Coherent Particle Production in Interactions of 17 Gev Pions With Emulsion Nuclei"

Tashkent, Izvestiya Akademii Nauk Uzbekskoy SSR, Seriya Fiziko-Matematicheskikh Nauk, No 5, 1971, pp 70-75

Abstract: The article presents experimental data on inelastic coherent particle production reactions in collisions of 17.2-Gev pi-mesons with photoemulsion nuclei, based on extensive statistical material obtained with the aid of angular screening tests devised by the authors. Three-pronged and five-pronged interactions with a zero number of heavily ionizing particles were screened for measurements. The mean free path in the photoemulsion was found to be 53^{+7}_{-5} m for three-pronged coherent reactions, $3.8^{+11.5}_{-1.6}$ km for five-pronged events. The azimuthal angular distribution in coherent particle production reactions was studied.

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USSR

AZIMOV, S. A., BETER, YE. V., GULYAMOV, U. G., and LEVIN, A. YA., Institute of Nuclear Physics, Academy of Sciences Uzbek SSR

"Inelastic Pion-Nucleon Interactions With High Multiplicity and a Model of Single-Pion Exchange"

Moscow, Yadernaya Fizika, Vol 14, No 1, Jul 71, pp 240-246

Abstract: The authors propose a model of a single-pion exchange for the inelastic collision $\pi + N \rightarrow n\pi + N$ with any (odd) number of secondary pions. They find the spectrum of the effective mass of the system of secondary pions in an analytical form that is convenient for computation. They compare the results of the computation with the available experimental data for different energies and find a good agreement between the suggested model and the experiment. The authors give 2 variations of the model which they describe mathematically and support with several illustrations of a graphic nature. The article contains 5 figures and 7 bibliographic entries.

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USSR

UDC 539.126.34

AZIMOV, S. A., ARIPOV, R., GULYAMOV, U. G., LOZHKIN, O. V.

"Some Characteristics of the Formation of ^{8}Li Fragments With a π^{-}-Meson Energy of 45 Gigaelectron Volts"

Tashkent, Izvestiya Akademii Nauk Uz SSSR, Seriya Fiziko-Matematicheskikh Nauk, No 3, 1970, pp 52-55

Abstract: This paper contains the results of an experimental investigation of the reactions of formation of ^{8}Li fragments during interaction of π^{-}-mesons, the impulse of which is 45 gigaelectron volts/second, with nuclei of an emulsion. The study of fragmentation in the very high-energy range is of interest in connection with certain hypotheses regarding the mechanism of these phenomena: the assumption of the effect of meson showers on the formation of fragments in nuclear splitting, the concept of shock waves in nuclear matter caused by primary particles, and the hypothesis of intranuclear reactions in clusters caused by cascade nucleons. In the experiment the method of nuclear emulsions was used to obtain maximum information about the characteristics of the formation of ^{8}Li fragments in nuclear 1/3

USSR

AZIMOV, S. A., et al, Izvestiya Akademii Nauk Uz SSSR, Seriya Fiziko-Matematicheskikh Nauk, No 3, 1970, pp 52-55

splitting. Nuclear emulsions of the B-R type were irradiated by a beam of π^--mesons with an energy of 45 gigaelectron volts in the IFVE accelerator.

Investigation of the ionization characteristics of particles leaving T-type tracks in the emulsions demonstated that the B^8 nuclei in these tracks constitute 5 percent for AgBr target nuclei. Out of 306 T-type tracks in four cases there were two electron tracks at the point of decay of the fragment. The probability of formation of T-type tracks in split AgBr nuclei with $N_{\pm} > 7$ when considering the geometric corrections turned out to be $0.022 + 0.0014$; the total cross section of formation of ^8Li from AgBr is $(6.4)\pm2)$ millibarns; the cross section of formation of two fragments of ^8Li in one splitting is 0.1 millibarn and ^8Li from light nuclei (C, N, O) $\sim$ 0.5 millibarns. A figure is presented showing the frequency of formation of ^8Li as a function of the number of beams $N_{\pm}$. Just as for lower energies the cross section of formation of ^8Li depends on the number of strongly ionizing particles in the split, and it

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USSR

AZIMOV, S. A., et al, Izvestiya Akademii Nauk Uz SSSR, Seriya Fiziko-Matematicheskikh Nauk, No 3, 1970, pp 52-55

increases with the number N_+. From the data it is noted that the generation of fragments is not connected with the number of relativistic particles. Comparison of the data obtained with the results of investigating ^{8}Li with lower energies of the incident particles (in the vicinity of $E > 10$ gigaelectron volts) reveals certain peculiarities of fragmentation in the given energy range: low variation of the total cross section of formation of ^{8}Li and practical constancy of the parameters determining the kinematic characteristics of ^{8}Li (anisotropy of the angular distribution, statistical parameters of the energy spectrum E, E_0, σ).

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USSR UDC 621.355.8.035.2

ANTONENKO, P. A., GULYAMOV, YU. N., and SAGOYAN, L. N.

"Study of the Specific Conductivity of the Active Mass of a Nickel Oxide Electrode"

Khim. tekhnologiya. Resp. mezhved. temat. nauch.-tekhn. sb. (Chemical Technology. Republic Interdepartmental Thematic Scientific and Technical Collection), 1971, vyp. 23, pp 44-51 (from RZh-Khimiya, No 6 (II), Jun 72, Abstract No 61245)

Translation: The magnitude of the specific conductivity of active masses of nickel oxide electrodes cycling in different electrolytes (KOH, NaOH and LiOH) are defined as functions of the temperature and degree of acidity. The mathematical equations describing the indicated functions are presented. The conductivity of the active mass of the nickel oxide electrode increases with an increase in temperature. The sharpest variation of the conductivity is observed in the low temperature range (-50 to +10°). With an increase in the degree of acidity, the conductivity of the active mass also increases and reaches a limiting value for an "active oxygen" content in the mass $\geq 65\%$. This is explained by the appearance of a sufficient amount of higher nickel oxides (in all probability NiO_2) in the mass which have high conductivity.

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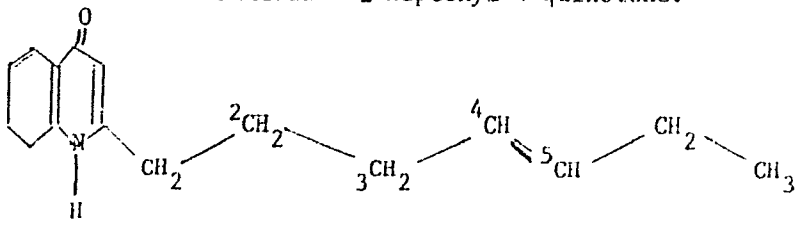
USSR UDC 547.944/945

[redacted], BESSONOVA, I. A., YUNUSOV, S. YU., Order of the Red Banner of Labor Institute of the Chemistry of Plant Substances of the Uzbek SSR Academy of Sciences

"Alkaloids of Haplophyllum Acutifolium"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 6, 1971, pp 850-851

Abstract: A study was made of the above-ground part of Haplophyllum acutifolium (Rutaceae family) gathered during the fruiting period in the vicinity of Kora-Kola near Palvan-Zau in the Turkmen SSR. Infrared, ultraviolet and nuclear magnetic resonance spectral data are presented for the alkaloids extracted from this plant. From these data and electron bombardment data the following structure is proposed for the new alkaloid 2-heptenyl-4-quinolone:



The new base has mp 122-123°.

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1/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--ALIPHATIC ACIDS SYNTHESIZED BY ASPOROGENIC YEASTS -U-

AUTHOR-(02)-MAVLANI, M.I., GULYAMOVA, N.

COUNTRY OF INFO--USSR

SOURCE--UZB. BIOL. ZH. 1970, 14(2), 17-19

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--YEAST, BIOSYNTHESIS, PAPER CHROMATOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605008/E11 STEP NO--UR/9079/70/014/002/0017/0019

CIRC ACCESSION NO--AP0140010

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140010

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPN. OF VOLATILE AND NONVOLATILE ALIPHATIC ACIDS SYNTHESIZED BY ASPOROGENIC YEASTS (MONILIA CANDIDA, CANOIDA MYCODERMA, TORULOPSIS BACILLARIS, BRETTANOMYCES VINI, AND RHODOTORULA GLUTINIS) WAS DETD. USING PAPER CHROMATOG. THE HIGHEST ACID FORMING CAPACITY WAS FOUND IN M. CANDIDA, B. VINI AND C. MYCODERMA.

UNCLASSIFIED

USSR

IVAKHNENKO, A. G.; OVCHINNIKOV, V. A.: PETRAKE, G.: GULYAN, N. V. (Kiev)

"Automatic Control of Complex Plants with Prediction Optimization by the Self-Organization Principle"

Kiev, Avtomatika; July-August 1973, pp 39-52

Abstract: In control with prediction optimization each solution is evaluated from the standpoint of its effect on predicting the future.

In this article the problem of the synthesis of optimal control was solved in discrete time. A plant (hydroelectric power station) for which optimal control may be found by means of both dynamic programming and the self-organization principle (selection) was taken as the first example. This made it possible to determine the dependence of the error of the exact solution on the choice of degree of freedom. For $F \geq 90$ both methods proved to give close results. In contrast to dynamic programming, the self-organization method is applicable to more complex plants with a greater amount of delaying independent variables and to optimization in a sliding interval of the prediction. A complex stochastic plant for which dynamic programming cannot be applied was taken as the second example.

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*USSR

IVAKHNENKO, A. G., et al., Avtomatika; July-August, 1973, pp 39-52

The article includes 22 equations, seven figures, and five tables. There are nine bibliographic references.

USSR

IVAKHNENKO, A. G., DIMITROV, V. D., GULYAN, N. V., IVAKHNENKO, L. N.

"Problems of Modeling of Complex Objects on the Basis of Heuristic Self-Organization"

Kiev, Kibernetika i Vychistel'naya Tekhnika, No 13, 1972, pp 18-38.

Abstract: A number of trends in cybernetics concern the problem of modeling of complex objects. The authors show that in spite of the differences in initial assumptions, all of these trends can be reduced to the creation of very complex objects, the quality of which is determined by the extent to which they can "learn" rapidly: i.e., the extent to which they can "construct an internal model of an external situation." Models studied include the Gabor predicting filter, the Kalman filter, the perceptron, and neuron networks.

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USSR

UDC 669.71.051

GULYANITSKIY, B. S.

"The Contemporary State of the Technology of Production of Aluminum in Foreign Countries and in the USSR (Literature Review 1969-1970)"

Metallurgiya Tsvet. I Redk. Met., 1970, (Itogi Nauki VINITI AN SSSR), [The Metallurgy of Nonferrous and Rare Metals, 1970 (Scientific Results, All-Union Institute for Scientific and Technical Information, Academy of Sciences, USSR) -- Collection of Works], Moscow, 1971, p 5-74. (Translated from Referativnyy Zhurnal Metallurgiya No 3, 1972, Abstract No 3G112 by S. Krivonosova).

Translation: A review on the production and consumption of Al, prospects for increases in the production of Al, the raw material base and economic relationships; studies of the production of Al_2O_3; the technology of electrolytic production of Al. 246 biblio refs.

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USSR UDC: 519.281

GULYANOV, Dzh. Kh.

"Accuracy of an Approximate Formula for Calculating Informational Weight"

V sb. Vopr. kibernetiki (Problems of Cybernetics--collection of works), vyp. 41, Tashkent, 1970, pp 29-35 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V354)

Translation: Let T_{nm} be a table of n columns and m rows filled with ones and zeros. A test of the table is called the aggregate of columns such that after all other columns of the table are eliminated, the rows of the table are different. A dead-end test is one in which no part of it is a test. The paper refines a formula known from the literature for calculating the length of dead-end tests, simplifying the solution of a number of classification problems. Exact values of the number of tests for a table T_{nm} are determined and tabulated for the case where n and m vary from 10 to 100. Ye. Barzilovich.

Acc. Nr: AP0037228 Ref. Code: UR 0391

PRIMARY SOURCE: Gigiyena, Truda i Professional'nyye Zabolevaniya, 1970, Nr 2, pp 14 - 17

HYPOTHALAMIC NEUROSECRETION AND THE STATE OF SUPRARENALS IN DOGS EXPOSED TO VIBRATION

Kiseleva, V. I.; Gul'yants, E. S.; Ellanskiy, Yu. G.; Gavrilova, T. M.

Summary

The response of hypothalamo-hypophysial-adrenal system to the effect of whole-body vibration (with frequency of 25 per sec, vertical amplitude of 0.30 mm and horizontal one — of 0.13—0.14 mm) applied daily for one hour over different time-intervals (3, 10, 20, 30 and 90 days) was studied in 15 dogs through tracing neurosecretory material in the hypothalamus and micrometry of neurons, as well as by analyzing histochemically lipoids, ascorbic acid and chromophil elements in the adrenal glands. Vibration was found to produce after different time-intervals qualitatively dissimilar shifts in the hypothalamic neurosecretion function. Alternation of a stronger and weaker functional activity of neurons reflects the development of a phasic state. Final adaptation of hypothalamic neurosecretion to test conditions takes place by the 90th day of the observation. By this time the activity of the system under study proceeds at a higher functional level.

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REEL/FRAME 19730152

GULYAR S.A.

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UDC [illegible]

STUDY OF SOME INDICES OF THE HIGHER NERVOUS ACTIVITY OF MAN SUBJECTED TO UNDERWATER ENVIRONMENT FOR MANY HOURS

[Article by S. O. Hulyar, H. Kikluvych, S. C. Levnyy, and S. S. [illegible], Donetsk State University; Kiev, Fiziolohichnyy Zhurnal Akademiyi Nauk Ukrayins'koyi RSR, Ukrainian, Vol 18, No 6, 1972, pp [illegible]]

A long confinement of men to underwater laboratories of an open type with an inside pressure equaling that of the surrounding environment is one of the most promising methods for the study of oceans. An effective use of the underwater dwelling depends on the ability of aquanauts to perform ... physical and scientific tasks directly in the water for long time intervals.

Little is known about the mental activity of aquanauts in an underwater environment. In fact, only initial attempts were made to evaluate the activity of men at great ocean depths [16]. A positive correlation was established between alpha rhythms on EEG and underwater swimming [...]. There are literature data indicating that the ability to perform physical work and that work output decreases with increasing water depth [11]. It was established during the Sealab II experiments that motion coordination and work effectiveness deteriorate under water [17]. Lack of a uniform methodological basis, the multifaceted approach to the problem, and environmental variation make it impossible to establish the functional state of the higher nervous activity of aquanauts. Furthermore, a short underwater stay of aquanauts cannot be extrapolated for much longer time intervals.

The aim of this work was to study some indicators of the higher nervous activity of aquanauts subjected to an underwater environment for many hours.

Experimental Methods

Two types of experiments were carried out: with 10 divers [...] years old performing periodically a definite kind of physical work while under water for 3-6 hours; and with aquanauts subjected to relative hypodynamics for 26 (1 aquanaut) and for 38 hours (2 aquanauts). In order to dif-

[illegible]

USSR UDC 626.024:616.21-008

SHAPARENKO, B. A., GULYAR, S. A., ZHURBA, A. N., and UTKIN, A. A., Otorhinolaryngology Department, Donetsk Medical Institute, and Medical Physiology Division, Donetsk Department, Central Experimental Design Bureau for Special Equipment

"Dynamics of Functional Shifts in the Otorhinolaryngological Organs of Scuba Divers"

Kiev, Zhurnal Ushnykh, Nosovykh, i Gorlovykh Bolezney, No 4, Jul/Aug 70, pp 79-82

Abstract: Thirteen scuba divers working at a depth of 13 to 15 meters (water temperature 17 to 21°C) were examined at 30-min intervals for 3 hours. The data obtained revealed functional shifts in the ear, nose, and throat which varied according to certain external factors. A lowering of the ambient temperature caused temporary constriction and then dilatation of the blood vessels in the nasal mucosa and lymphoid tissue of the nasopharynx. Increased secretion of the mucous glands and impaired nasal breathing resulted in obstruction of the eustachian tubes and deterioration of hearing. These shifts were less pronounced in a control group of eight scuba divers who wore a "Sadko" water suit made of thin rubber with a wool lining.
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1/3 022 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--STATE OF PERIPHERAL BLOOD CIRCULATION IN PERSONS BEING FOR A LONG TIME IN AN OPEN TYPE SUBMARINE LABORATORY, HABITAT -U-

AUTHOR-(04)-AKHLAMOV, YE.A., GULYAR, S.O., GERASYUTENKO, YE.I., KHAES, O.A.

COUNTRY OF INFO--USSR

SOURCE--FIZIOLOGICHNYY ZHURNAL, AKADEMIYA NAUK UKRAINS'KOI RSR, 1970, VOL 16, NR 1, PP 115-120

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BLOOD CIRCULATION, PERIPHERAL CIRCULATION, AQUANAUT, UNDERWATER RESEARCH LABORATORY, ATMOSPHERIC HUMIDITY, ATMOSPHERIC TEMPERATURE/(U)IKHTIANDR UNDERWATER LABORATORY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1369 STEP NO--UR/0238/70/016/001/0115/0120

CIRC ACCESSION NO--AP0136728

UNCLASSIFIED

2/3 022 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0136728
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PERIPHERAL BLOOD CIRCULATION OF EIGHT AQUANAUTS WHO SPENT SEVEN DAYS IN AN OPEN TYPE SUBMARINE LABORATORY WAS STUDIED TO DETERMINE THE ADAPTIVE STRESSES OF A PERSON SUBJECTED FOR A PROLONGED TIME TO UNUSUAL CONDITIONS WITHOUT PREVENTIVE PREPARATION FOR SUCH CONDITIONS. THESE AQUANAUTS PARTICIPATED IN IKHTIANDR-67 BLACK SEA EXPEDITION IN AUGUST-SEPTEMBER, 1967. THE LABORATORY, A SPECIALLY DESIGNED FOUR CHAMBER VESSEL HAVING VOLUME OF 28 M PRIME3 WITH FORCED VENTILATION, WAS SUBMERGED TO 14 M DEPTH. IT WAS EQUIPPED FOR CONTINUOUS LIVING UNDER WATER. ATMOSPHERIC PRESSURE OF 2.2 ATM, TEMPERATURE OF 23 TO 31 C AND HUMIDITY OF 93PERCENT WERE CONTINUOUSLY MAINTAINED. ONLY HEALTHY INDIVIDUALS, 24 TO 42 YEARS OLD WERE SELECTED FOR INVESTIGATION. TWICE A DAY THEY WALKED FOR 30 MIN AT A DEPTH OF OVER 14 M AND ONCE A DAY PERFORMED PHYSICAL WORK FOR 20 MIN. WATER TEMPERATURE VARIED FROM 20 TO 23 C BUT AQUANAUTS WERE WARMLY DRESSED. PERIPHERAL BLOOD CIRCULATION WAS MEASURED BEFORE SUBMERGING AND ON THE SURFACE AFTER BEING UNDER WATER FOR ONE, TWO, THREE, FOUR, AND FIVE DAYS. IN ADDITION TO BLOOD CIRCULATION AND PULSE, SKIN TEMPERATURE IN THE MOUTH AND AT VARIOUS POINTS OF THE BODY AND LIMBS WERE MEASURED. MEASURING TECHNIQUES AND INSTRUMENTATION ARE DESCRIBED IN DETAIL AND DATA OBTAINED ARE PRESENTED IN TABULAR FORM.

UNCLASSIFIED

3/3 022 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0136728
ABSTRACT/EXTRACT--AS A RESULT OF THE DESCRIBED INVESTIGATION THE FOLLOWING PRELIMINARY CONCLUSIONS WERE MADE: FROM AMONG MANY FACTORS AFFECTING A HUMAN BEING SUBJECTED TO PROLONGED STAYING UNDERWATER MOST IMPORTANT FOR BLOOD CIRCULATION ARE HIGH HUMIDITY AND AIR TEMPERATURE, AND CONTINUOUS INHALING OF SUBTOXIC CONCENTRATIONS OF OXYGEN; AFTER BEING IN A SUBMARINE LABORATORY FOR THREE TO FOUR DAYS AN ADAPTATION OF THE ORGANISM TAKES PLACE; WHEN PERFORMING UNDERWATER WORK IN A LIGHT AQUANAUT SUIT MUCH ATTENTION SHOULD BE PAID TO PROTECTING THE AQUANAUT FROM COLD; AND IN DESIGNING OPEN TYPE UNDERWATER BASE, MEANS SHOULD BE PROVIDED FOR KEEPING AQUANAUTS WARM. FACILITY: KAFEDRA KHVOROB VUKHA, GORLA, NOSA DONETS'KOGO MEDYCHNOGO INSTYTUTU; MEDYCHNYYVIDDIL VNDI GIRNYCHORYATUVAL'NOY SPRAVY.

UNCLASSIFIED

USSR

UDC 621.791.061.3(083.8)

GULYAYEV, A. I., Candidate of Technical Sciences

"Meeting on Scientific Research Works Which Have Been Achieved"

Moscow, Svarovhnoye Proizvodstvo, No 4, Apr 71, p 60

Abstract: A meeting discussing the results of scientific-research and experimental-industrial works on welding carried out at enterprises and scientific-research and educational institutions of the Gor'ko district was held in Gor'ki on 16-17 December 1970. Seventy-five delegates representing 35 organizations took part in the meeting. The meeting was organized by the Gor'ki Center of Scientific-Technical Information, the joint section of the Scientific and Technical Society of the Machinery and Ship-Building Industries and the Gor'ki Automobile Plant. Topics discussed were as follows: weldability of thin bimetal sheet by point and continuous contact welding; strength of joints obtained by point mash welding; possibility of using the Vang method for joining a spiral with an outlet in heating elements; the effect of chemical elements on crack formation in the weld metal; point welding of high-

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USSR

GULYAYEV,A. I., Svarovhnoye Proizvodstvo, No 4, Apr 71, p 60

resistance stainless steel flanges; automatic soldering of bushings made of OKh18N9T steel using a powder solder, and others.

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USSR (G) UDC 615.475:612-087

GULYAYEV, A. I., LISITSYN, A. I., POPOV, L. A., Institute of Biological Physics, Academy of Sciences of the USSR

"A Program Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 3, 1970, p 128, patent No 260284, filed 15 Nov 68

Abstract: This Author's Certificate introduces a program device which contains a reading unit, cadence pulse generator, tracker, comparison circuit, coincidence circuit and synchropulse counter, the comparison circuit being connected to the synchropulse counter. As a distinguishing feature of the patent, in order to improve the precision of time intervals in the program, the device has a time register connected to the reading unit and the coincidence circuit, and a second comparison circuit connected to the first. The first comparison circuit is connected to the time register and to the synchropulse counter, and the coincidence circuit is also connected to the cadence pulse generator.

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USSR

UDC 061:621.791(063.3)

GULYAYEV, A. I., Candidate of Technical Sciences

"Conference on Welding in Gor'kiy"

Moscow, Svarochnoye Proizvodstvo, No 5, May 70, p 61

Abstract: The article discusses the Gor'kiy Oblast conference on the results of scientific research and experimental and industrial work in welding during 1969 at the enterprises and scientific research and educational institutions of Gor'kiy and the oblast. The conference was held on 9-10 December 1969. Ninety participants from 46 organizations attended the conference. The participants familiarized themselves with the introduction of advanced welding processes at the Gor'kiy Automobile Plant. The conference adopted recommendations for introducing most of the completed scientific research and experimental and industrial works discussed at the conference.

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1/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--A PROGRAM DEVICE -U-

AUTHOR-(03)-GULYAYEV, A.I., LISITSYN, A.I., POPOV, L.A.

COUNTRY OF INFO--USSR

SOURCE--PATENT NO 260284, FILED 15 NOV 68
REFERENCE--MOSCOW, OTKRYTIYA, IZOBRETENIYA, PROMYSHLENNYYE OBRAZTSY,
DATE PUBLISHED-------70

SUBJECT AREAS--METHODS AND EQUIPMENT, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--PATENT, PULSE GENERATOR, COMPARATOR CIRCUIT, COINCIDENCE CIRCUIT, TIME INTERVAL COUNTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0731 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0126441

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AA0126441
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS AUTHOR'S CERTIFICATE INTRODUCES A PROGRAM DEVICE WHICH CONTAINS A READING UNIT, CADENCE PULSE GENERATOR, TRACKER, COMPARISON CIRCUIT, COINCIDENCE CIRCUIT AND SYNCHROPULSE COUNTER, THE COMPARISON CIRCUIT BEING CONNECTED TO THE SYNCHROPULSE COUNTER. AS A DISTINGUISHING FEATURE OF THE PATENT, IN ORDER TO IMPROVE THE PRECISION OF TIME INTERVALS IN THE PROGRAM, THE DEVICE HAS A TIME REGISTER CONNECTED TO THE READING UNIT AND THE COINCIDENCE CIRCUIT, AND A SECOND COMPARISON CIRCUIT CONNECTED TO THE FIRST. THE FIRST COMPARISION CIRCUIT IS CONNECTED TO THE TIME REGISTER AND TO THE SYNCHROPULSE COUNTER, AND THE COINCIDENCE CIRCUIT IS ALSO CONNECTED TO THE CADENCE PULSE GENERATOR. FACILITY: INSTITUT BIOLOGICHESKOY FIZIKI AN SSSR.

UNCLASSIFIED

1/2 034 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--WAVE PROCESSES IN HE II NEAR THE SURFACE OF A HEATER -U-

AUTHOR--GULYAYEV, A.I.

G

COUNTRY OF INFO--USSR

SOURCE--PIS'MA ZH. EKSP. TEOR. FIZ. 1970, 11(7), 332-7

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HELIUM, WAVE PROPAGATION, PHOTOGRAPH, OPTIC PROPERTY, AIR HEATER, TEMPERATURE DEPENDENCE, SOUND WAVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/0109 STEP NO--UR/0386/70/011/007/0332/0337

CIRC ACCESSION NO--AP0127735

UNCLASSIFIED

2/2 034 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0127735
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WAVE PROCESSES IN LIQ. HE II WERE STUDIED BY PHOTOGRAPHING THE OPTICAL HETEROGENEITY ARISING NEAR THE HEATING SURFACE IN THE COURSE PULSED HEATING BY USING A THIN FLAT HEATER. MOVING "FOCI OF EMISSION" WERE OBSD. WHICH DID NOT ARISE IN HE I. A NO. OF THE SIMULTANEOUSLY ORIGINATED SOUND SOURCES DEPENDED ON THE TEMP. AND THE INPUT POWER OF THE HEATER. BY PROPAGATION OF THE FOCI ALONG THE HEATER, SECONDARY SOUND WAVES WERE CREATED. FACILITY: INST. FIZ. PROBL., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 620.17:669.14.018.6

GULYAYEV, A. P., ZIKEYEV, V. N., and GUSEYNOV, R. K., Central Scientific Research Institute of Ferrous Metallurgy

"Mechanical Properties of Different High-Strength Steels"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 1, Jan 74, pp 38-41

Abstract: The advantages of medium-carbon structural steel 30N9K4 (4.3% Co) were studied and its properties compared to other steels. Comparisons were made by heat treating the steel under study and steels 28Kh3SNMVFA and N18K9M5T to a tensile strength of 165 kgf/mm^2 (the heat treatment being different for each steel), heat treating steels 30N9K4, 18Kh2N4VA, and 28Kh3SNMVFA to maximum strength, and heat-treating steels 30N9K4, 38KhN3MA, and 40KhNMA to a tensile strength of 95 kgf/mm^2. Of particular interest was determining if steel 30N9K4 possessed the best combination of tensile strength and impact strength. For the given tensile strengths, steel 30N9K4 had the best impact strength of the steels heat treated to maximum strength, the best impact strength, between -180 and -80° C, of the steels heat treated to 165 kgf/mm^2, but was surpassed by steel 18Kh2N4VA when heat treated to 95 kgf/mm^2. One figure, two tables, ten bibliographic references.
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USSR UDC 669.15'24'25-192:621.78

GULYAYEV, A. P., and PASTERNAK, I. I., Moscow

"Martensitic Transformation in Kovar-Type Alloys"

Moscow, Izvestiya Akademii Nauk USSR, Metally, No 4, Jul-Aug 72, pp 159-163

Abstract: A study was made of the process of martensitic transformation in Fe-Ni-Co alloys of the Kovar type (29NK), containing 27-29% Ni, 17-18% Co, and the remainder iron. A characteristics of these alloys is their proximity to the boundary of the ($\gamma \rightarrow \alpha$) transformation on the structural diagram. This means that, even when there are insignificant deviations from the strictly specified chemical composition of Kovar, a martensitic transformation can occur in these alloys by cooling them below room temperature, and this results in an abrupt change of their properties. The investigation results are discussed by reference to diagrams of the magnetic hysteresis of the Kovar alloy with 28.5% Ni and 17.5% Co in continuous cooling (to -196°C), continuous heating (to Curie temperature), and room temperature after tempering (inital condition - cooling to -196°C). The regions of direct and inverse ($\gamma \rightleftarrows \alpha$) transitions in the alloys were established as a function of their Ni and Co contents. It is shown that the γ-phase formation goes with the electric resistance drop and with the increase of hardness, marnetization of saturation, and

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GULYAYEV, A. P., and PASTERNAK, I. I., Izvestiya Akademii Nauk USSR, Metally, No 4, Jul-Aug 72, pp 159-163

coercivity of the alloys. The martensitic phase in the alloys is stable to 350-450°C, after which the reverse ($\alpha \rightarrow \gamma$) transition occurs. Six illustrations, three tables.

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USSR UDC 669.15-194.2:620.17

LAPIN, P. G., GULYAYEV, A. P., and UL'YANIN, YE. A., Central Scientific Research Institute for Ferrous Metals (TsNIICHERMET)

"Effect of Alloy Components on the Properties of Stainless Precipitation Hardened Martensitic Steels at Low Temperatures"

Moscow, Metallovedeniye i termicheskaya obrabotka metallov, No 2, 1972, pp 47-52

Abstract: The study concerns the effect of alloy components on the structure and properties of stainless precipitation-hardened martensitic steel at both room and below-zero temperatures. The experimental material was low carbon steel with 12% Cr and alternate contents of Ni, Ti, Cu, and Mo. In all steels under study nickel markedly decreases the temperatures of both the beginning and the end of martensitic transformation while Ti, Cu, and Mo hardly affect these temperatures. The amount of austenite in steels with various contents of alloy components is determined by their effect on the direct martensitic transformation temperature. Both the phase composition and the properties of the steels are a function of temperature changes in the A_{c_1} transformation region. The phase ratios may be varied over a wide range by heating

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